Title: Locating Information for Calculus Teachers on the Internet

Brief Overview/Rationale:

A major challenge for teachers today is to educate students to use and understand the tools of the 21st Century. In order for teachers to do this, they must be aware of these tools and how to use them. One of these basic tools is the Internet. Teachers can use the materials that they access to better prepare and challenge their students. In this unit, teachers will learn how to look up information on the Internet that they can use in teaching calculus. Areas of interest could include such topics as the history of calculus, textbook information, workshops, and resource and testing material.

Link to Standards:

- **Problem Solving** Teachers will learn where to find calculus material available on the Internet. They can then provide assistance to other teachers in their school.

- **Statistics** Surveys have indicated that most teachers are not aware of the vast resources that are available on the Internet.

Grade/Level:

Teachers who wish to access calculus resources from the Internet.

Duration/Length:

Depends on how much time a teacher wants to devote to accessing and using the material available on the Internet.

Prerequisite Knowledge:

Teachers should have some knowledge of the following skills:

- Computer Skills
- Basic word-processing skills
- Calculus background
- Knowledge of the Internet

Objectives:

Teachers will:

- learn how to find material and resources on the Internet that deal with calculus. The same techniques could be used for any other subjects.
- be able to access such things as
  1. Tests and quizzes
  2. Books and other published material which deal with calculus
  3. Textbook reviews
  4. Software(including freeware that can be downloaded)
  5. History of Calculus
  6. Using computers and calculators
  7. Educational programs available for teachers
  8. Practical applications of calculus in different disciplines
  9. Lessons on different topics.
  10. Advanced Placement material

Materials/Resources/Printed Materials:

- Computer
- Printer
- Access to Internet
- Paper/pencil/calculator
- Provided resource material

Development/Procedures:

- Teachers should have access to the Internet.
- Teachers should be able to Access a browser.
- Use search engines found on all browsers.
- Search for the word calculus and specific calculus topic using the search engines which are available on the Internet. Some search engines available on the Internet are InfoSeek, Lycos, Excite, and Yahoo.
- Internet addresses are provided to direct the teacher to calculus information on the Internet (Resource Pages 1-4).
- This material is intended to be a model for direct Internet exploration and to demonstrate what kind of calculus material is available on the Internet.
- Teachers should then try to access other material on their own using computers available at school or at home.

Evaluation:

Teachers will evaluate their own success by how much calculus material they were able to access over the Internet.

Extension/Follow Up:

1. Additional lessons will be given as needed.
2. Due to the changing nature of the Internet, teachers may not be able to locate information at addresses given in the resource material. This material is intended to be a model for direct Internet exploration.

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Resource Page 1
WWW Calculus Addresses
(Enter given address at Location prompt)

TI Information
http://www.ti.com/

Calculus and Mathematica Home Page
http://www-cm.math.uiuc.edu/

Addison-Wesley
http://archives.math.utk.edu/calculus/crol.html

CTME Calculus Tutorial
http://piglet.uccs.edu/mathhtml/catme/ctmeclc.html

Calculus
http://www.wiley.com/../anton/anton5e.html

A Reform Calculus Shortcourse: Calculus Enhanced With Computer
http://www.ams.org/mathcal/info/1996_jun24-28_amherst.html

Math Forum: Calculus Lesson Plans
http://forum.swarthmore.edu/calculus/calculus.units.html

Calculus Reform at OSU
http://www.math.okstate.edu./archives/calcosu.html

Calculus and Mathematica - Ohio State University
http://www-cm.math.uiuc.edu/

Interactive Learning in Calculus and Differential Equations
http://www.ma.iup.edu/MathDept/Projects/CalcDEMma/Summary.html

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Tests: Calculus in Context
http://math.smith.edu/Local/cictests.html

Area 3.2.2 - First Derivative Tests
http://calculus.sjdccd.cc.ca.us/DifCalcI/3-2/322/322-h.html

Area 3.2.3 - Second Derivatives and Tests
http://calculus.sjdccd.cc.ca.us/DifCalcI/3-2/323/323-h.html

Resource Page 2

Math 126A: Old quizzes, tests, etc.
http://www.math.washington.edu/~ford/126S95/Old/

The Proficiency Quiz:
http://www.math.washington.edu/~ford/126S95/Syllabus/paragraphstar6_5.html

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Math 126: Past Quizzes, Tests, and Homeworks
http://www.math.washington.edu/~ford/M126S96/past.html

The Mathematics Placement Tests
http://www.capcollege.bc.ca/dept/math/mpt/mpt.html

Mathematics Placement Exams
hppt://www.mcs.sdsmt.edu/math/placement/calc5.html

Math Placement Exams
hppt://www.mcs.sdsmt.edu/math/placement/calc4.html
hppt://www.mcs.sdsmt.edu/math/placement/calc1.html
hppt://www.mcs.sdsmt.edu/math/placement/calc2.html
hppt://www.mcs.sdsmt.edu/math/placement/calc3.html

Calculus III Exams
http://www.geom.umn.edu/~dpvc/talks/EAB.95-04/CalcIII/exams.html

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MA113syl-Homework/Labs/Exams
http://don.skidmore.edu/academics/mcs/ma113exa.htm

Summer Exams 1995 Calculus
http://tedser.ucg.ie/exams/summer95/s10195/s10195.html

Math Stuff by Steve html
http://mickey.lcsc.edu/~claris/stevie.html

Class Information and Old Tests
http://www.orst.edu/~peterseb/class.html

The Proficiency Quiz:
http://www.math.washington.edu/~lee/Courses/126-94-95/syllabus/paragraphstar6_5.html

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Math 126: Past Quizzes, Tests, and Homeworks
http://www.math.washington.edu/~lee/Courses/126-95-96/past.html

Resource Page 3

Mathematics Archives MSDOS Software for Calculus
http://archives.math.utk.edu/software/msdos/calculus/.html

Case Studies
http://www.pws.com/pws/math/modules/cases/casestu.htm

Finite Mathematics and Calculus Applied to the Real World
http://www.hofstra.edu/~matscw/realworld.html

NEW HORIZONS GOVERNOR'S SCHOOL for SCIENCE and TECHNOLOGY
http://www.lafayette.wjcc.k12.va.us/gov.html

Conferences and Workshops for Faculty, 1996
http://archives.math.utk.edu/workshops/.html

Mathematics Course Catalog
http://math.nps.navy.mil/Catalog/full.html

Mathematics Archives Calculus Resources On-Line
http://archives.math.utk.edu/calculus/crol.html

Calculus Applied to the Real World
http://www.harpercollins.com/college/warnerc.htm

Monash University--Software Development
http://insect.sd.monash.edu.au/

Mathematics Archives Calculus Resources On-Line
http://archives.math.utk.edu/calculus/crol.html

What's New in Calculus Resources On-Line
http://archives.math.utk.edu/calculus/whats_new.html

Materials for Calculus
http://www.math.hawaii.edu/~lee/calculus/

What Is Calculus About?
http://www.math.hawaii.edu/~lee/calculus/sawyer.html

Penn State Calculus Page
http://newton.math.psu.edu/calculus/Overview.html

Tintin-Cast-Calculus
http://www.netlynx.com/~thumper/tintin/cast/calculus.html

The rise of calculus
http://www-groups.dcs.st-and.ac.uk/~history/HistTopics/The_rise_of_calculus.html

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Roman Calculus
http://serial.music.uiowa.edu/~greg/calculus.html

NOTE

The above listing is a small fraction of the calculus oriented material available on the Internet. Sources that the teachers find useful should be Bookmarked to give easier access.